II. Remarks

Claims 4, 7-8, and 24-25 are pending in this application. Claims 1-3 and 9-23 were previously withdrawn from further consideration. Claim 5 was previously cancelled; and claim 6 is hereby cancelled. Claim 4 has been amended, support for which may be found in the specification as originally filed at page 31, line 13 (*SEQ ID NO:2:* "The deduced amino acid sequence of murine Cyr61...is set forth in SEQ ID NO:2."); page 31, lines 19-20 (*SEQ ID NO:4:* "The amino acid sequence of human Cyr61...is set forth in SEQ ID NO:4."); page 9, line 17 (*fragments*: "[T]he invention contemplates full length ECM signaling molecules and fragments thereof."); page 9, line 18 (*derivatives*: "[T]he polypeptides of the invention may be underivatized, or derivatized in conformity with a native or non-native derivatization pattern."); page 9, line 21 (*variants*: "*i.e.*, polypeptides having different amino acid sequences"); page 9, line 22 (*analogs*: "*i.e.*, polypeptides having a non-standard amino acid or other structural variation from the conventional set of amino acids"); page 9, line 24 (*homologs*: "*i.e.*, polypeptides sharing a common evolutionary ancestor with another polypeptide"); page 31, line 25 (*38 cysteines*: "[B]oth proteins also contain 38 cysteine residues, distributed throughout both proteins but notably absent from the central regions of both murine and human Cyr61."); page 31, lines 22-27 (*91% similarity*: "A comparison of the mouse and human Cyr61 sequences, presented in SEQ ID NO:2 and SEQ ID NO:4, respectively, reveals 91% similarity."). Accordingly, Applicant respectfully submits that no new matter has been added. Upon entry of these amendments, claims 4, 7-8, and 24-25 are under active consideration.

A. Patentability Arguments

1. 35 U.S.C. § 112, first paragraph

a. The rejection of claims 4, 6-8 and 24-25 as failing to comply with the written description requirement has been overcome.

At page 4 of the Office Action, claims 4, 7-8, and 24-25 stand rejected as failing to comply with the written description requirement. Applicant respectfully traverses the rejection. Applicant respectfully submits that claims 4, 6-8 and 24-25, as amended, comply with the written description requirement.

Claims 4, 7-8, and 24-25 are directed to the use of Cyr61 in methods of screening for a modulator of cell migration. The Examiner alleges that the claims are indefinite based on the use of laboratory designation "Cyr61" to describe the claimed genus of polypeptides including fragments, analogs and derivatives thereof. The Examiner further alleges that the written description supports only a method for screening a modulator of cell migration forming a gel matrix comprising SEQ ID NO:2 (murine Cyr61) or SEQ ID NO:4 (human Cyr61). Office Action, Page 6.

Consistent with page 22 of the written description as originally filed, claim 4 has been amended to specifically associate "Cyr61" with SEQ ID NOS: 2 and 4, two of the amino acid sequences according to the present invention as found in mouse and human, respectively. The screening method of amended claim 4 also includes fragments, analogs, homologs, variants, and derivatives of human and murine Cyr61. With reference to fragments, analogs, homologs, variants, and derivatives of Cyr61, the Examiner alleges that Applicant has failed to provide sufficient distinguishing characteristics of the genus to show possession of the entire claimed genus. Office Action, Page 4. Applicant respectfully submits that claim 4, as amended, provides sufficient distinguishing characteristics to show possession of the entire claimed genus.

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice or by disclosure of relevant, identifying characteristics such as structure. *See* MPEP § 2163. Claim 4, as amended, is directed to fragments, analogs, homologs, variants, and derivatives of Cyr61 have the following distinguishing characteristics: (i) fragments, analogs, homologs, variants, and derivatives of *human or murine Cyr61*; (ii) fragments, analogs, homologs, variants, and derivatives of Cyr61 that are *at least 91% similar to human or murine Cyr61*; and (iii) fragments, analogs, homologs, variants, and derivatives of Cyr61 that comprise *38 cysteines*.

The presence of at least 38 cysteines is an identifying characteristic of polypeptides contemplated in the present invention. (Spec., page 31, line 25) In fact, the presence of numerous cysteine residues was the origin of the designation "Cyr61": *C*ysteine *R*ich. (Spec., p.4, line 13) A comparison of SEQ ID NOS: 2 and 4 indicates the conservation of 38 cysteines between human and murine Cyr61. Prior to the present Office Action, in a telephone interview on August 6, 2003, the Examiner indicated that the claims would be allowed with a statement for reasons of allowance stating that "it is agreed upon that the definition of Cyr61 is a 41kDa

polypeptide exhibiting 39 cysteine residues, approximately 10% of the 379 amino acids constituting the [unprocessed] protein as incorporated by reference via Yang et al." Applicant respectfully points out that this statement, citing Yang, refers strictly to murine Cyr61, not to human Cyr61 or to the conserved regions between the two. Moreover, murine Cyr61 contains only 38 cysteines in its secreted portion. Page 47, line 27. The 38 cysteines conserved between human and mouse structurally distinguish the claimed genus of Cyr61 fragments, analogs, homologs, variants, and derivatives.

In addition to human and murine Cyr61 comprising 38 cysteines, Figure 1 indicates that other related cysteine rich proteins also have 38 cysteines share Cyr61's structural feature of 38 cysteines. Although other related cysteine proteins have 38 cysteines, murine and human Cyr61 polypeptides are more similar to each other than to other proteins to which they are related. For example, there is 91% similarity between human and murine Cyr61, whereas Fisp12 is only 65% identical to murine Cyr61. (Spec., p. 31, lines 22-23, and p. 32, lines 8-9) Based on the higher similarity of human and murine Cyr61 compared to the similarity with related cysteine rich proteins, the claimed genus of Cyr61 fragments, analogs, homologs, variants, and derivatives having at least 91% similarity to either human or mouse Cyr61 is therefore structurally distinguished.

As discussed above, the claimed fragments, analogs, homologs, variants, and derivatives of Cyr61 have the following distinguishing characteristics: (i) they are related to human or murine Cyr61; (ii) they are at least 91% similar to human or murine Cyr61; and (iii) they comprise at least 38 cysteines. Applicant respectfully submits that the claimed distinguishing characteristics are relevant for identifying members of the claimed genus. Accordingly, Applicant respectfully submits that claims 4, 6-8 and 24-25, as amended have overcome the rejection under 35 U.S.C. § 112, first paragraph, for lack of written description support and respectfully request withdrawal thereof.

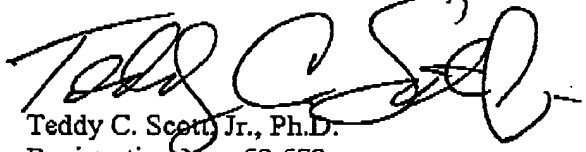
B. Conclusion

In view of the above amendments and remarks, Applicant respectfully submits that the instant application is in good and proper order for allowance and early notification to this effect is solicited. If, in the opinion of the Examiner, a telephone conference would expedite

prosecution of the instant application, the Examiner is encouraged to call the undersigned at the number listed below.

Respectfully submitted,

HOWREY SIMON ARNOLD & WHITE, LLP

By: 
Teddy C. Scott, Jr., Ph.D.
Registration No.: 53,573

Dated: February 12, 2004
HOWREY SIMON ARNOLD & WHITE, LLP
321 N. Clark Street, Suite 3400
Chicago, IL 6010
(312) 846-5621 (Telephone)
(312) 595-2250 (Fax)